

# PATENT SPECIFICATION

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(19)



## (54) IMPROVEMENTS IN POWDER TYPE PORTABLE FIRE EXTINGUISHERS

(71) We, RAMPART ENGINEERING COMPANY LIMITED, a British Company of Peckham Grove, London SE15 6DN., do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention concerns improvements in powder type portable fire extinguishers of the kind employing a gas cartridge for creating pressure to expel powder from a container.

Our prior patent No. 1,284,877 describes and claims a powder type portable fire extinguisher in which the gas discharge cartridge is positioned in a powder discharge tube in sealed relation with a fitting providing radial ports for gas release above the powder and axial ports for emission of powder passed around the cartridge to a release point.

Such extinguishers have proved perfectly effective in practice with most conventional kinds of fire extinguishing powders, but some very fine grades of powder are liable to compaction and do not flow freely under the influence of gas pressure applied from above. Such powders are best shifted under the flotation effect of gas admitted well down in the powder mass, and it is the object of this invention to provide an extinguisher enabling very fine powders to be effectively discharged.

According to the invention we provide a powder type portable fire extinguisher of the kind hereinbefore defined in which the gas cartridge is positioned in a powder discharge tube in sealed relationship with a fitting having axial ports for emission of powder passing around the cartridge to a release point and radial ports in sealed communication with a tube provided to lead gas discharged from the cartridge to a position in the mass of the powder in the

container.

The tube is conveniently fitted in the neck ring of the powder container in communication with an annular chamber therein pressurised from the radial ports.

A sealing ring is preferably fitted between the neck ring and the fitting against which the gas cartridge is sealed or the cartridge-holding discharge tube. The sealing ring may be located in a groove in the neck ring or a groove in the fitting.

In an alternative construction the tube for leading gas down into the powder is concentric with the powder discharge tube and is sealed to the fitting above the radial ports therein.

The above and other features of the invention are embodied in alternative constructions of extinguisher which will now be described with reference to the accompanying drawings, in which:—

Figure 1 is a central vertical section through an extinguisher;

Figure 2 is a central vertical section through an alternative sealing arrangement usable in the extinguisher of Figure 1; and

Figure 3 is a central vertical section through an extinguisher of modified construction.

The extinguisher of Figure 1 has a casing 1, domed base 2 and an internally threaded neck ring 3.

The fitting 4 threaded into the neck ring 3 has axial ports (not shown) for powder discharge from around the cartridge 5 and radial ports 6 for gas emission. The outer body of the fitting 4 is a one piece casting incorporating the discharge nozzle 23 and mountings for the piercer and control lever assembly.

The neck ring 3 is provided with an annular chamber 30 in communication with the radial ports 6 of the fitting 4, and a sealing ring 31 fitted in a groove in the neck ring forms a seal with the upper part

7 of the powder discharge tube.

A tube 32 is fitted into the lower face of the fitting 4 and communicates with the chamber 30. It runs down parallel to the powder discharge tube and terminates well down in the powder mass a little above the bottom of the powder discharge tube.

An alternative sealing arrangement is shown in Figure 2. In this case the sealing ring 33 is housed in a groove in the fitting 4 and seals against the neck ring 3.

The extinguisher of Figure 3 embodies the same basic principle as the above described forms, but the tube 32 is concentric with the powder discharge tube and is fixed by a sealed thread to the fitting 4.

In this form the fitting 4 is stepped at its base and gas released from the radial ports flows down the annular space between the tubes.

In operation of the extinguisher, gas from the pierced cartridge, led down the tube 32 enters and fluidises the powder mass near the bottom of the powder discharge tube, up which it passes around the cartridge to the discharge nozzle.

#### WHAT WE CLAIM IS:—

1. A powder type portable fire extinguisher of the kind hereinbefore defined in which the gas cartridge is positioned in a powder discharge tube in sealed relationship with a fitting having axial ports for emission of powder passing around the cartridge to a release point and radial ports in sealed communication with a tube provided to lead gas discharged from the

cartridge to a position in the mass of the powder in the container.

2. An extinguisher according to Claim 1, in which the tube is fitted in the neck ring of the powder container in communication with an annular chamber therein pressurised from the radial ports.

3. An extinguisher according to Claim 2, in which a sealing ring is fitted between the neck ring and the fitting against which the gas cartridge is sealed.

4. An extinguisher according to Claim 2, in which a sealing ring is fitted between the neck ring and the cartridge-holding powder discharge tube.

5. An extinguisher according to Claim 3, in which the sealing ring is housed in a groove in the fitting.

6. An extinguisher according to Claim 4, in which the sealing ring is housed in a groove in the neck ring.

7. An extinguisher according to Claim 1, in which the tube is concentric with the powder discharge tube.

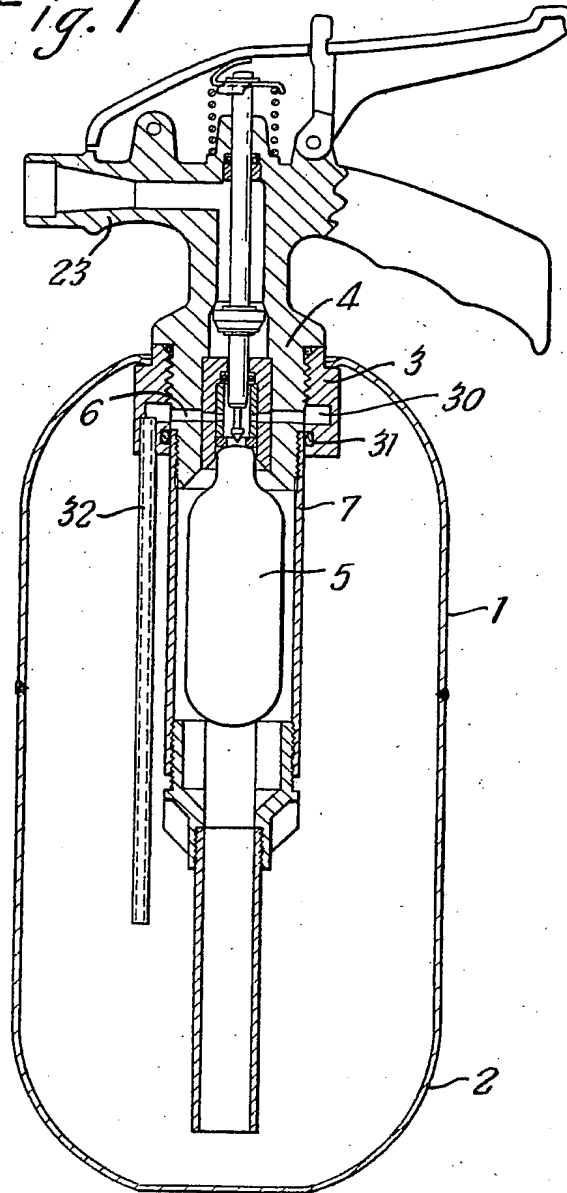
8. An extinguisher according to Claim 7, in which the tube is sealed to the fitting above the radial ports therein.

9. A fire extinguisher constructed and arranged substantially as described herein and shown in Figure 1, or Figure 2, or Figure 3 of the accompanying drawings.

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*Fig. 1*



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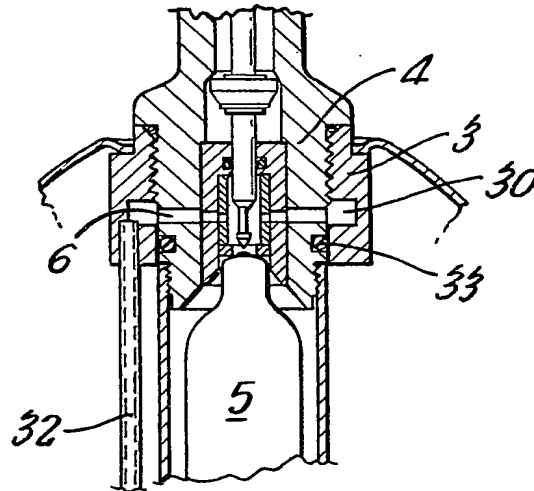
COMPLETE SPECIFICATION

3 SHEETS

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SHEET 2

*Fig. 2*



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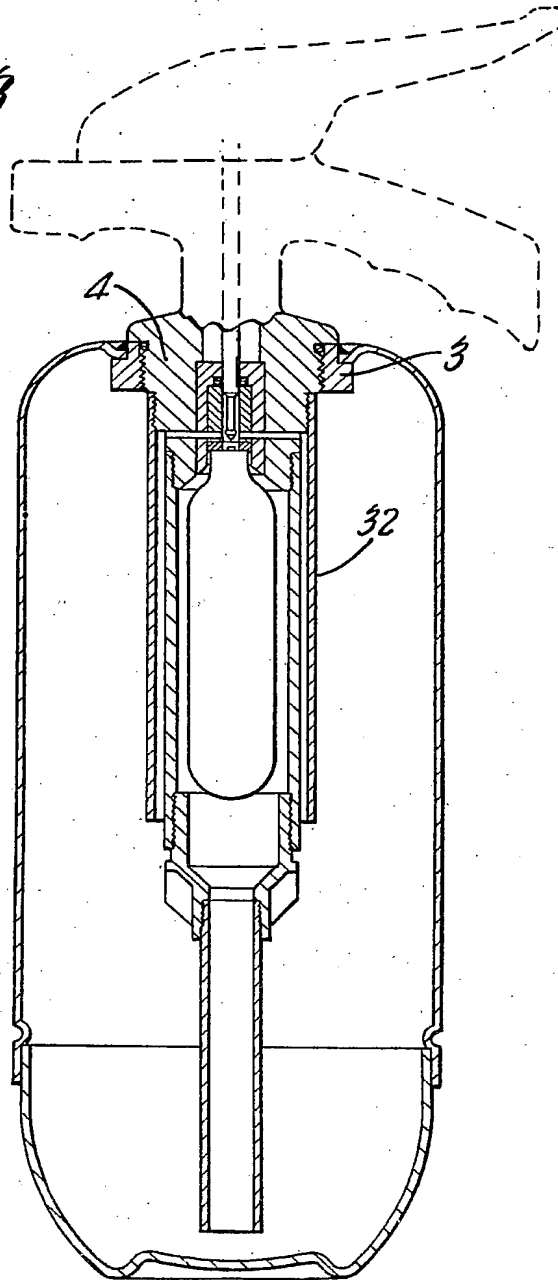
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SHEET 3

*Fig. 3*



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